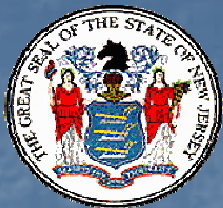


US EPA ARCHIVE DOCUMENT



NEW JERSEY BOARD OF PUBLIC UTILITIES

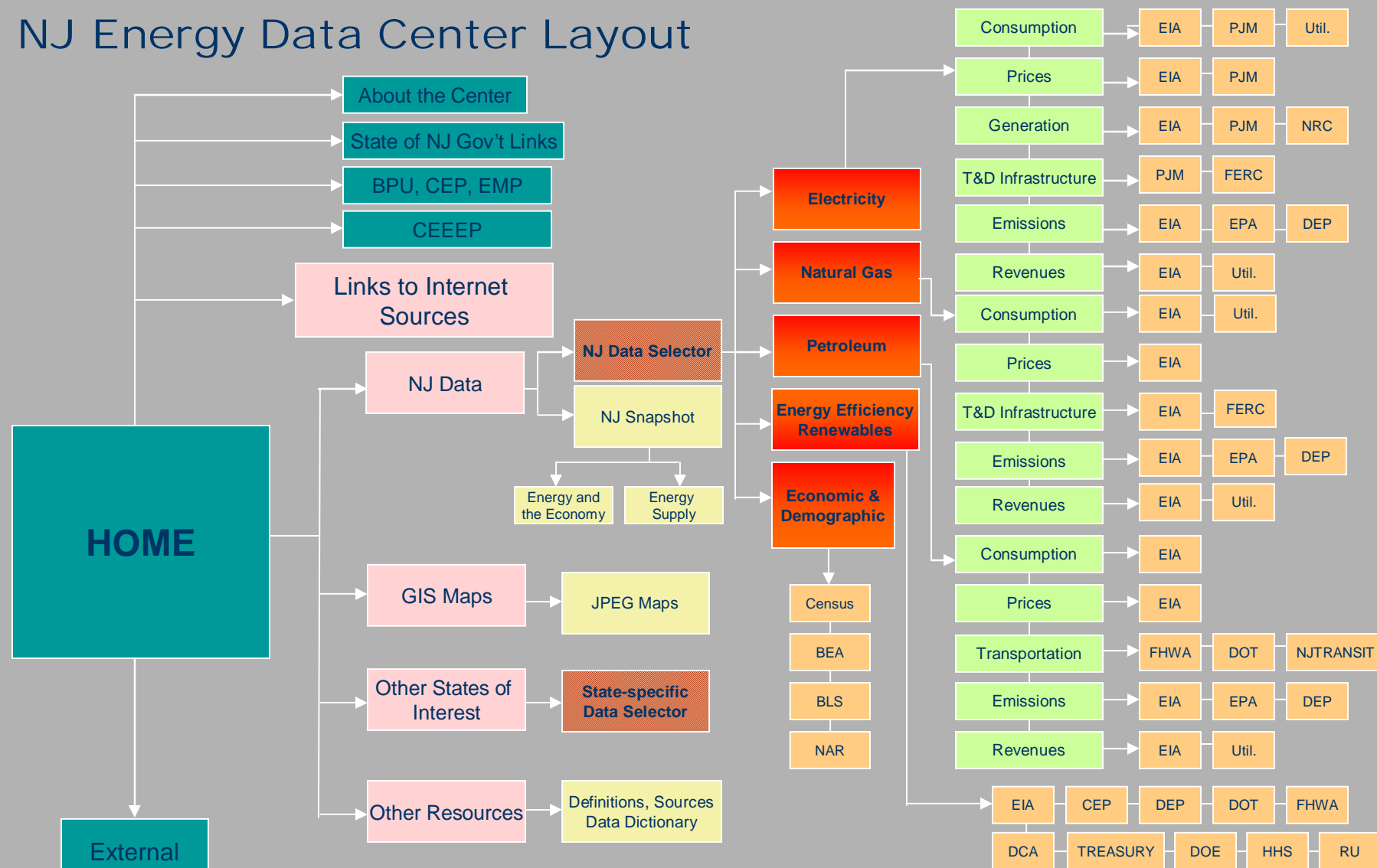
An Overview of State Level Energy Data in the development of New Jersey Energy Master Plan

Bharat C. Patel, D. Eng. Sc., P.E.
Director of Planning

May 22, 2008

- New Jersey Energy Data Center
- Governor Corzine's Initiatives
 - Global Warming*
 - Energy Master Plan*

NJ Energy Data Center Layout



KEY

- Homepages
- Main Menu Items; links to pages within EDC website
- End pages w/ links, graphs, etc.

- Data Selector – Allows users to choose from 5 categories
- Main Data Categories w/ Drop Down Menus
- Drop Down Menu Categories w/ further menu items
- Drop Down Menu Categories w/ final drop down menus

5/20/2008

New Jersey Energy Data Center, "Data Dictionary" as of 05/06/08

Electricity

Consumption

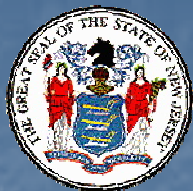
EIA	Table Title	Units	Time Period	Source	Type
	Form 826 - Monthly Electric Utility Sales and Revenue Data (MWh)	MWh	1990-2007	Form EIA-826 Database Monthly Electric Utility Sales and Revenue Data http://www.eia.doe.gov/cneaf/electricity/page/eia826.html	Monthly

PJM	Table Title	Units	Time Period	Source	Type
	Historical Load Data, JCPL	MW	1993-2007	Historical Load Data http://www.pjm.com/services/system-performance/historical.html	Annual
	Historical Load Data, PJM	MW	1993-2007	Historical Load Data http://www.pjm.com/services/system-performance/historical.html	Annual
	Historical Load Data, NJ	MW	1993-2007	Historical Load Data http://www.pjm.com/services/system-performance/historical.html	Annual

Utilities	Table Title	Units	Time Period	Source	Type
	Monthly Utility Reports to BPU	# of	2004-2006	Monthly email listserve	Monthly
	Office of NJ State Climatologist (ONJSC) Average cooling days, data from 1971-200	days	1971-2000	http://climate.rutgers.edu/stateclim_v1/norms/monthly/cdd.html	
	Office of NJ State Climatologist (ONJSC) Average heating days, data from 1971-201	days	1971-2000	http://climate.rutgers.edu/stateclim_v1/norms/monthly/hdd.html	

Prices

EIA	Table Title	Units	Time Period	Source	Type
	Form 826 - Monthly Electric Utility Sales and Revenue Data (¢/KWh)	¢/KWh	1990-2007	Form EIA-826 Database Monthly Electric Utility Sales and Revenue Data http://www.eia.doe.gov/cneaf/electricity/page/eia826.html	Monthly



Governor Corzine's Initiatives

- Global Warming
- Energy Master Plan

Global Warming

- Executive Order 54
- Global Warming Response Act

<http://www.state.nj.us/globalwarming/index.shtml>

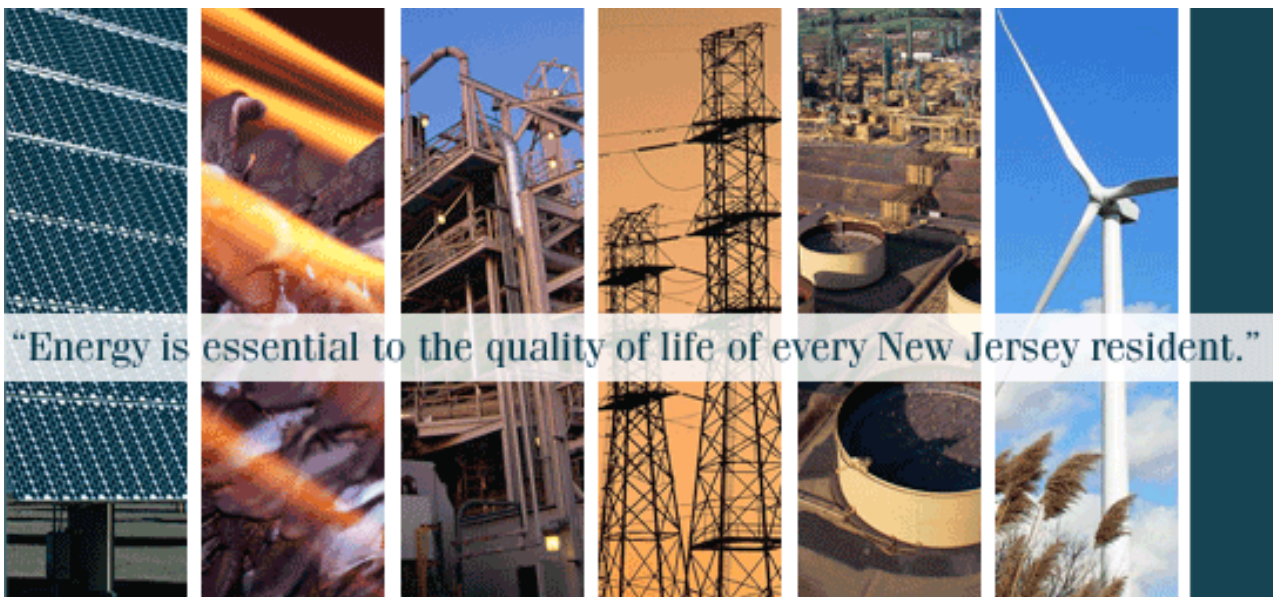
Greenhouse Gas Emission Targets

- 1990 = 120 MMT
- 2005 = 138 MMT
- 2006 = TBD assume 140 MMT
- 2020 = 158 MMT based on BAU
- 2020 = 120 MMT Global Warming Response Act
- 2050 = 20% of 2006 (assume 28 MMT)

Energy Master Plan



STATE OF NEW JERSEY ENERGY MASTER PLAN



<http://nj.gov/emp>

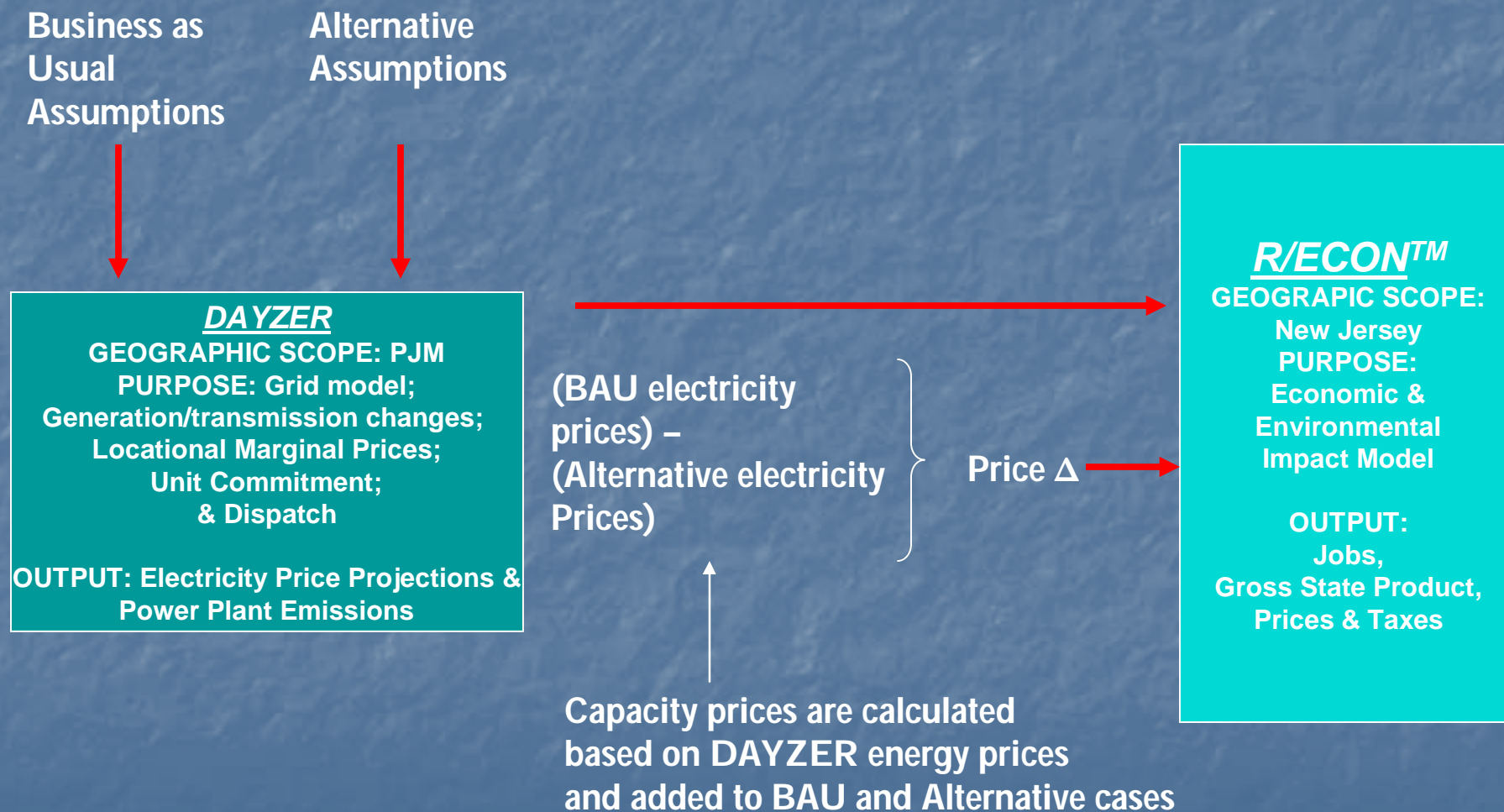
Goals

- Maximize the State's energy conservation and energy efficiency to achieve reductions in energy consumption of at least 20% by 2020.
- Reduce peak demand for electricity by 5,700 MW by 2020.
- Meet 22.5% of the State's electricity needs from renewable sources.
- Develop new low carbon emitting, efficient power plants and close the gap between the supply and demand of electricity
- Invest in innovative clean energy technologies and businesses to stimulate the industry's growth in New Jersey.

Business As Usual vs. Alternative Case

- Business as Usual (BAU)
 - Existing economic and energy efficiency trends
 - Includes Regional Greenhouse Gas Initiative (RGGI)
 - Includes the “22.50%” RPS in 2020
- Alternative Case
 - Covers all sectors (heating, electricity)
 - Focuses on energy efficiency and renewable sources
 - Substantial emphasis on electricity

Energy Modeling Flow Chart



Implementation Strategies

- **Conservation and Energy Efficiency**
 - Energy Efficiency Program for Existing Buildings
 - Enhanced Building Codes
 - Appliance Standards
 - Best Practices Manuals and Energy Audits for 10 Industry Groups
 - Education and Public Outreach
- **Reduce Peak Demand**
 - Decrease Size of Customers in Real-time Pricing
 - Demand Response Programs
 - Load Management Program for Large Commercial and Industrial Customers
 - Block Tariff Pricing
 - A Pilot for Testing Components of a "Smart Grid"
- **Renewable Energy**
 - Solar Transition
 - Offshore Wind
 - Onshore Wind
 - Biofuel
 - Biomass-fired Electric Production Capacity
 - Increase the Renewable Portfolio Standards for 2021-2025
- **Develop New Low Carbon Emitting, Efficient Power Plants and Close the Gap between the Supply and Demand of Electricity**
 - Evaluate State Authorities to Influence Development of Low Carbon Emitting, Efficient Generation to Meet Demand
 - Combined Heat and Power Retail Margin Fund Incentive to Develop 1500 MW of Cogeneration
 - Sales and Use Tax Exemption for Combined Heat and Power (CHP)
 - Consideration of the Need for a New Nuclear Plant in New Jersey
 - Facilitate Siting of Clean Generation Sources
 - For Natural Gas Supply, Assess Future Pipeline Capacity Requirements
- **Invest in Clean Energy Technologies and Businesses**
 - Clean Energy Technology
 - Green Jobs Initiative

Appendix

New Jersey Data Center Data Dictionary

New Jersey Energy Data Center, "Data Dictionary" as of 05/06/08

Electricity

Consumption

EIA	Table Title	Units	Time Period	Source	Type
	Form 826 - Monthly Electric Utility Sales and Revenue Data (MWh)	MWh	1990-2007	Form EIA-826 Database Monthly Electric Utility Sales and Revenue Data http://www.eia.doe.gov/cneaf/electricity/page/eia826.html	Monthly
PJM	Table Title	Units	Time Period	Source	Type
	Historical Load Data, JCPL	MW	1993-2007	Historical Load Data http://www.pjm.com/services/system-performance/historical.html	Annual
	Historical Load Data, PJM	MW	1993-2007	Historical Load Data http://www.pjm.com/services/system-performance/historical.html	Annual
	Historical Load Data, NJ	MW	1993-2007	Historical Load Data http://www.pjm.com/services/system-performance/historical.html	Annual

Utilities	Table Title	Units	Time Period	Source	Type
	Monthly Utility Reports to BPU	# of	2004-2006	Monthly email listserve	Monthly
	Office of NJ State Climatologist (ONJSC) Average cooling days, data from 1971-200	days	1971-2000	http://climate.rutgers.edu/stateclim_v1/norms/monthly/cdd.html	
	Office of NJ State Climatologist (ONJSC) Average heating days, data from 1971-201	days	1971-2000	http://climate.rutgers.edu/stateclim_v1/norms/monthly/hdd.html	

Prices

EIA	Table Title	Units	Time Period	Source	Type
	Form 826 - Monthly Electric Utility Sales and Revenue Data (¢/KWh)	¢/KWh	1990-2007	Form EIA-826 Database Monthly Electric Utility Sales and Revenue Data http://www.eia.doe.gov/cneaf/electricity/page/eia826.html	Monthly

(...continued)

PJM	Table Title	Units	Time Period	Source	Type
	Day Ahead LMP (\$/mw) PJM, 2007	(\$/mw)	2007	Monthly Locational Marginal Pricing http://www.pjm.com/markets/jsp/Impmonthly.jsp	Monthly
	Day Ahead LMP (\$/mw) PSEG, 2007	(\$/mw)	2007	Monthly Locational Marginal Pricing http://www.pjm.com/markets/jsp/Impmonthly.jsp	Monthly
	Day Ahead LMP (\$/mw) PSEG, pre-2007	(\$/mw)	2000-2007	Monthly Locational Marginal Pricing http://www.pjm.com/markets/jsp/Impmonthly.jsp	Monthly
	Day Ahead LMP	(\$/mw)	2000-2007	Monthly Locational Marginal Pricing http://www.pjm.com/markets/jsp/Impmonthly.jsp	Monthly
	Day Ahead LMP Zones	(\$/mw)	2000-2007	Monthly Locational Marginal Pricing http://www.pjm.com/markets/jsp/Impmonthly.jsp	Monthly

Utilities	Table Title	Units	Time Period	Source	Type
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Generation					
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EIA	Table Title	Units	Time Period	Source	Type
	Form 860: Existing Electric Generating Units in the United States (NJ data)		2005	Form EIA-860 Database: Annual Electric Generator Report http://www.eia.doe.gov/cneaf/electricity/page/capacity/capacity.html	Annual
	Form 860: Electric Generating Unit Additions in the United States (NJ data)		2006	Form EIA-860 Database: Annual Electric Generator Report http://www.eia.doe.gov/cneaf/electricity/page/capacity/capacity.html	Annual
	Form 860: New Jersey Generating Units by County (Plant Y)		2001-2005	Annual Electric Generator Report http://www.eia.doe.gov/cneaf/electricity/page/eia860.html	Annual
	Form 860: New Jersey Generating Units (Gen Y)		2007	Annual Electric Generator Report http://www.eia.doe.gov/cneaf/electricity/page/eia860.html	Annual

(...continued)

		"1990 - 2005 Net Generation by State by Type of Producer by Energy Source (EIA-906)"		1990-2005	Electric Power Annual 2005 - State Data Tables http://www.eia.doe.gov/cneaf/electricity/epa/epa_sprdshts.html	Annual
		"1990 - 2005 Existing Nameplate and Net Summer Capacity by Energy Source, Producer Type and State (EIA-860)"		1989-2005	Electric Power Annual 2005 - State Data Tables http://www.eia.doe.gov/cneaf/electricity/epa/epa_sprdshts.html	Annual
		Generator Information			eia.doe.gov	
		In-State, Out-of-State, Onsite Generation		2004	Various EIA Sources	Annual
		In-State, Out-of-State, Onsite Generation		2005	Various EIA Sources	Annual
		In-State, Out-of-State, Onsite Generation		2006	Various EIA Sources	Annual
	PJM	Table Title	Units	Time Period	Source	Type
Transmission						
	PJM	Table Title	Units	Time Period	Source	Type
	FERC	Table Title	Units	Time Period	Source	Type
Emissions						
	EIA	Table Title	Units	Time Period	Source	Type
		Emissions from Energy Consumption for Electricity Production and Useful Thermal Output at Combined-Heat-and-Power Plants		1990-2006	http://www.eia.doe.gov/cneaf/electricity/epa/epat5p1.html	Annual
	EPA	Table Title	Units	Time Period	Source	Type
	DEP	Table Title	Units	Time Period	Source	Type

(...continued)

Revenues					
EIA	Table Title	Units	Time Period	Source	Type
	Form 826 - Monthly Electric Utility Sales and Revenue Data (\$000s)	\$000s	1990-2007	Form EIA-826 Database Monthly Electric Utility Sales and Revenue Data http://www.eia.doe.gov/cneaf/electricity/page/eia826.html	Monthly
Utilities	Table Title	Units	Time Period	Source	Type
	Monthly Utility Reports to BPU	K\$	2004-2006	Monthly email listserve	Monthly
Natural Gas					
Consumption					
EIA	Table Title	Units	Time Period	Source	Type
	Natural Gas Consumption by End Use (million cubic feet), Annual		1967-2006	Natural Gas Consumption by End Use http://tonto.eia.doe.gov/dnav/ng/ng_cons_sum_dcu_SNJ_a.htm	Annual
	Natural Gas Consumption by End Use (million cubic feet), Monthly		1989-2007	Natural Gas Consumption by End Use http://tonto.eia.doe.gov/dnav/ng/ng_cons_sum_dcu_SNJ_a.htm	Monthly
Utilities	Table Title	Units	Time Period	Source	Type
	Monthly Utility Reports to BPU	# of	2004-2006	Monthly email listserve	Monthly
Prices					
EIA	Table Title	Units	Time Period	Source	Type
	NJ Sales and Prices		1989-2007	http://tonto.eia.doe.gov/dnav/ng/ng_pri_sum_dcu_SNJ_m.htm	Monthly
Utilities	Table Title	Units	Time Period	Source	Type

(...continued)

T&D Infrastructure						
EIA	Table Title	Units	Time Period	Source	Type	
FERC	Table Title	Units	Time Period	Source	Type	
Emissions						
EIA	Table Title	Units	Time Period	Source	Type	
EPA	Table Title	Units	Time Period	Source	Type	
DEP	Table Title	Units	Time Period	Source	Type	
Revenues						
EIA	Table Title	Units	Time Period	Source	Type	
Utilities	Table Title	Units	Time Period	Source	Type	
	Monthly Utility Reports to BPU	K\$	2004-2006	Monthly email listserve	Monthly	
Petroleum						
Consumption						
EIA	Table Title	Units	Time Period	Source	Type	
Prices						
EIA	Table Title	Units	Time Period	Source	Type	
	Fuel Oil Consumption (Distillate Fuel Oil and Kerosene Sales by End Use) (thousand gallons)	Mgal	1990-2005	Distillate Fuel Oil and Kerosene Sales by End Use http://tonto.eia.doe.gov/dnav/pet/pet_cons_821u_se_dcu_SNJ_a.htm	Annual	
	Fuel Oil Prices (cents per gallon excluding taxes)	¢/gal	1990-2007	No. 2 Distillate Prices by Sales Type http://tonto.eia.doe.gov/dnav/pet/pet_pri_dist_dcu_SNJ_m.htm	Monthly	

(...continued)

	Motor Gasoline Prices (¢/gallon excluding taxes)	¢/gal	1990-2007	Prices, Sales Volume and Stock by State http://tonto.eia.doe.gov/dnav/pet/pet_cons_prim_dcu_SNJ_m.htm	Monthly
	Motor Gasoline (thousand gallons per day)	kGal/D ay	1990-2007	Prime Supplier Sales Volumes http://tonto.eia.doe.gov/dnav/pet/pet_cons_prim_dcu_SNJ_m.htm	Monthly
Transportation					
FHWA	Table Title	Units	Time Period	Source	Type
	NJ Vehicle Miles Traveled by Functional System	Millions	1994-2005	NJ Department of Transportation	Annual
DOT	Table Title	Units	Time Period	Source	Type
NJ Transit	Table Title	Units	Time Period	Source	Type
Emissions					
EIA	Table Title	Units	Time Period	Source	Type
EPA	Table Title	Units	Time Period	Source	Type
DEP	Table Title	Units	Time Period	Source	Type
Revenues					
EIA	Table Title	Units	Time Period	Source	Type
Utilities	Table Title	Units	Time Period	Source	Type

(...continued)

EE & RE					
EIA	Table Title	Units	Time Period	Source	Type
CEP	Table Title	Units	Time Period	Source	Type
	NJ Comfort Partner, Income Eligibility for Energy Efficiency Aid	\$	2007	Comfort Partners http://njcleanenergy.com/residential/programs/comfort-partners/comfort-partners	Annual
	NJ Clean Energy Program, Lifetime Energy Savings and Renewable Energy Generation, 2001-2005	MWh, Dtherms	2001-2005	New Clean Energy Program	Annual
	NJ Clean Energy Program, Annual Energy Savings and Renewable Energy Generation, 2001-2005	MWh, KW, Dtherms	2001-2005	New Clean Energy Program	Annual
	Residential ENERGY STAR Products Program Results	MWh	2003-2005	New Clean Energy Program	Annual
	NJ Clean Energy Program, Expenditures (\$000s)	\$000s	2001-2005	New Clean Energy Program	Annual
	Appliance Cycling Program Results	\$000s, MW	2001-2005	New Clean Energy Program	Annual
	Cool Cities Program Results	\$000s, MW	2003-2005	New Clean Energy Program	Annual
	SBC Funding Levels	\$	2005-2007	New Clean Energy Program	Monthly
	Emission Savings 2001-05		2001-2005	New Clean Energy Program	Annual
DEP	Table Title	Units	Time Period	Source	Type
DOT	Table Title	Units	Time Period	Source	Type

(...continued)

FHWA	Table Title	Units	Time Period	Source	Type
DCA	Table Title	Units	Time Period	Source	Type
RU	Table Title	Units	Time Period	Source	Type
	Biomass Amounts in County	dry tons, Mwh/yr	2007	The New Jersey BioEnergy Calculator and BioEnergy Resource Database	
	Electricity Production Potential in each County	Mwh/yr	2007	The New Jersey BioEnergy Calculator and BioEnergy Resource Database	
	Current Gross Quantity (dry tons) in each County	dry tons	2007	The New Jersey BioEnergy Calculator and BioEnergy Resource Database	
	Net Usable Quantity (dry tons) in each County	dry tons	2007	The New Jersey BioEnergy Calculator and BioEnergy Resource Database	
Treasury	Table Title	Units	Time Period	Source	Type
Econ/Demographic					
Census	Table Title	Units	Time Period	Source	Type
	NJ County Housing Unit Structures by Type	units	2006	http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2006_EST_G00_&_lang=en&_ts=213538662598	Annual
	NJ County Housing Units Year Built	units	2006	http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2006_EST_G00_&_lang=en&_ts=213538662598	Annual
	NJ County Bedrooms per Residential Unit	units	2006	http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2006_EST_G00_&_lang=en&_ts=213538662598	Annual
	NJ County Available Vehicles per Household	units	2006	http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2006_EST_G00_&_lang=en&_ts=213538662598	Annual

(...continued)

	NJ County Heating Fuel Type by Housing Units	units	2006	http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2006_EST_G00_&_lang=en&_ts=213538662598	Annual
	NJ Towns Utilities included in rent	units	2000	http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2006_EST_G00_&_lang=en&_ts=213538662598	Annual
	NJ Towns Housing Units Year Built	units	2000	http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2006_EST_G00_&_lang=en&_ts=213538662598	Annual
	NJ Towns Housing Units Structures by Type	units	2000	http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2006_EST_G00_&_lang=en&_ts=213538662598	Annual
	NJ Towns Heating Fuel Type by Housing Units	units	2000	http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2006_EST_G00_&_lang=en&_ts=213538662598	Annual
BEA	Table Title	Units	Time Period	Source	Type
BLS	Table Title	Units	Time Period	Source	Type
	NJ Employees by Industry	ee	1990-2007		Monthly
NAR	Table Title	Units	Time Period	Source	Type
Other State Tables					
California	Table Title	Units	Time Period	Source	Type
	CA Employees by Industry	#	1990-2007		Monthly
				http://bea.gov/regional/definitions/nextpage.cfm?key=Gross%20Domestic%20Product%20by%20State%20%28millions%20of%20current%20dollars%29	Annual
					Monthly
	Natural Gas Consumption by end use				Monthly

EIA Data Sets for EMP Projections

Sector	Residential	Commercial	Industrial
Electricity	Annual Electric Power Industry Database (Form EIA-861): http://www.eia.doe.gov/cneaf/electricity/page/eia861.html Annual Electric Power Industry Database (Form EIA-906/920): http://www.eia.doe.gov/cneaf/electricity/page/eia906_920.html Annual Electric Power Industry Database (Form EIA-860): http://www.eia.doe.gov/cneaf/electricity/page/eia860.html Monthly Electric Utility Database (Form EIA-826): http://www.eia.doe.gov/cneaf/electricity/page/eia826.html		
Natural Gas	EIA, Natural Gas Consumption by End Use: http://tonto.eia.doe.gov/dnav/ng/ng_cons_sum_dcu_SNJ_a.htm		
<u>Fuel Oil:</u> No. 2 Distillate	Adjusted Sales of Distillate Fuel Oil by End Use: http://tonto.eia.doe.gov/dnav/pet/pet_cons_821dsta_dcu_SNJ_a.htm Sales of Distillate Fuel Oil by End Use: http://tonto.eia.doe.gov/dnav/pet/pet_cons_821dst_dcu_SNJ_a.htm "State Energy Profiles: http://www.eia.doe.gov/emeu/states/state.html?q_state_a=nj&q_state=NEW%20JERSEY		
Residual	n/a n/a n/a	Adjusted Sales of Residual Fuel Oil by End Use: http://tonto.eia.doe.gov/dnav/pet/pet_cons_821rsda_dcu_SNJ_a.htm Sales of Residual Fuel Oil by End Use: http://tonto.eia.doe.gov/dnav/pet/pet_cons_821rsd_dcu_SNJ_a.htm EIA, "State Energy Profiles: http://www.eia.doe.gov/emeu/states/state.html?q_state_a=nj&q_state=NEW%20JERSEY	
Kerosene	Adjusted Sales of Kerosene by End Use: http://tonto.eia.doe.gov/dnav/pet/pet_cons_821kera_dcu_SNJ_a.htm Sales of Kerosene by End Use: http://tonto.eia.doe.gov/dnav/pet/pet_cons_821ker_dcu_SNJ_a.htm "State Energy Profiles: http://www.eia.doe.gov/emeu/states/state.html?q_state_a=nj&q_state=NEW%20JERSEY		
Propane	Petroleum, Prime Supplier Sales Volumes: http://tonto.eia.doe.gov/dnav/pet/pet_cons_prim_dcu_SNJ_a.htm		